

Appendix

Appendix Table A. Complication codes by delivery mode

Appendix Table B. Regression results

Appendix Figure A. Unadjusted annual maternal complication rates by physician years of experience for stayer physicians

Appendix Figure B. Adjusted annual maternal complication rates by physician years of experience for stayer physicians

Appendix Table A. Complication codes by delivery mode

	ICD-9 Diagnosis Codes
Vaginal delivery	<p>Haemorrhage: 287.4, 648.22, 649.32, 666.02, 666.04, , 666.10, 666.12, 666.14, 666.20, 666.22, 666.24, 666.32, 667.02, 667.12, 998.11</p> <p>Laceration: 664.21, 664.31, 664.41, 664.51, 664.61 ,664.81, 664.91, 665.31, 665.41, 674.22</p> <p>Infection: 646.62, 670.02, 672.02, 996.60, 996.62, 999.3</p> <p>Thrombotic and other: 512.0, 512.1, 512.8, 518.4, 518.81, 584.5, 584.8, 584.9, 665.51, 669.12, 669.22,669.42, 669.82, , 671.42, 671.52, , 673.12,673.22, 674.32,674.52, 674.92, 785.50, 785.51, 785.59, 996.31, 998.4, 998.7, 999.2, , 999.4, 999.5, 999.6, 999.7, 999.8, 999.9</p>
Cesarean delivery	<p>Haemorrhage: 287.4, 648.22, 649.32, 666.02, 666.04, 666.10, 666.12, 666.14, 666.20, 666.22, 666.24, 666.32, 667.02, 667.12, 998.11</p> <p>Infection: 646.62, 670.02, 672.02, , 674.12, 674.32, 998.59, 999.3</p> <p>Operative: 669.42, 998.20, 998.4, 999.83</p> <p>Thrombotic and Other: 512.0, 512.1, 512.8, 518.4, 518.81, 584.5, 584.8, 584.9, 669.12, 669.22, 669.82, 671.42, 671.52, 673.12, 673.22, 674.52, 674.92, 785.50, 785.51, 785.59, 996.31, 996.60, 996.62, 998.60, 998.7, 999.2, 999.4, 999.5, 999.6, 999.7, 999.8, 999.9</p>

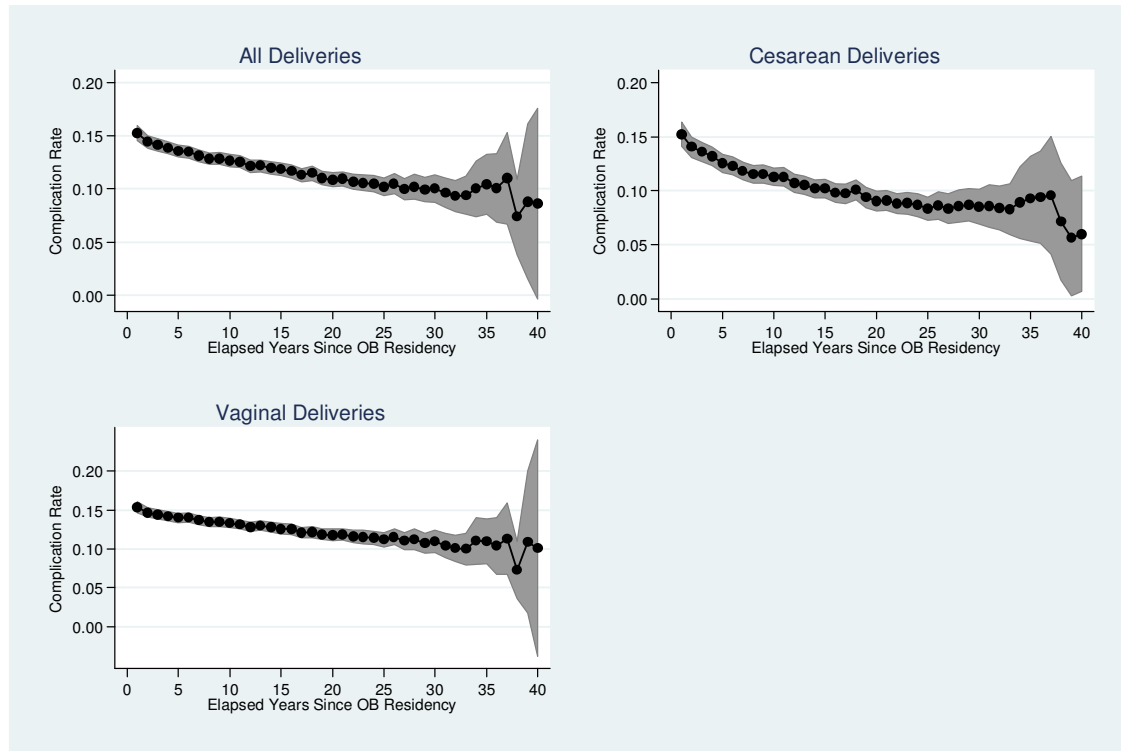
Appendix Table B. Regression results

All Deliveries				
Elapsed Years Since Residency Completion	All Physicians		Stayer Physicians	
	Unadjusted	Adjusted	Unadjusted	Adjusted
1-10	-0.24*** [-0.28, -0.20]	-0.21*** [-0.23, -0.19]	-0.22*** [-0.27, -0.17]	-0.20*** [-0.23, -0.18]
11-20	-0.17*** [-0.21, -0.13]	-0.11*** [-0.13, -0.09]	-0.16*** [-0.21, -0.11]	-0.10*** [-0.13, -0.08]
21-30	-0.13*** [-0.20, -0.07]	-0.05*** [-0.08, -0.01]	-0.14*** [-0.23, -0.06]	-0.07*** [-0.11, -0.04]
31-40	-0.03 [-0.29, 0.23]	0.06 [-0.04, 0.16]	-0.01 [-0.30, 0.28]	0.06 [-0.05, 0.17]
N physician-years	54,736		37,354	
N physicians	5,175		3,044	
Cesarean Deliveries				
Elapsed Years Since Residency Completion	All Physicians		Stayer Physicians	
	Unadjusted	Adjusted	Unadjusted	Adjusted
1-10	-0.36*** [-0.42, -0.30]	-0.19*** [-0.23, -0.16]	-0.32*** [-0.39, -0.26]	-0.20*** [-0.24, -0.17]
11-20	-0.18*** [-0.23, -0.12]	-0.11*** [-0.14, -0.08]	-0.21*** [-0.28, -0.14]	-0.14*** [-0.17, -0.10]
21-30	-0.15*** [-0.24, -0.05]	-0.04* [-0.09, 0.01]	-0.11* [-0.23, 0.01]	-0.10*** [-0.15, -0.05]
31-40	0.08 [-0.26, 0.43]	0.01 [-0.14, 0.16]	0.11 [-0.27, 0.48]	-0.02 [-0.18, 0.14]
N physician-years	53,453		36,047	
N physicians	5,162		2,963	
Vaginal Deliveries				
Elapsed Years Since Residency Completion	All Physicians		Stayer Physicians	
	Unadjusted	Adjusted	Unadjusted	Adjusted
1-10	-0.20*** [-0.24, -0.16]	-0.23*** [-0.25, -0.20]	-0.18*** [-0.22, -0.13]	-0.22*** [-0.25, -0.19]
11-20	-0.16*** [-0.20, -0.12]	-0.11*** [-0.14, -0.09]	-0.14*** [-0.19, -0.09]	-0.10*** [-0.13, -0.07]
21-30	-0.11*** [-0.18, -0.04]	-0.04** [-0.07, -0.01]	-0.13*** [-0.21, -0.04]	-0.06*** [-0.10, -0.02]
31-40	-0.07 [-0.35, 0.20]	0.06 [-0.06, 0.18]	-0.11 [-0.41, 0.20]	0.04 [-0.09, 0.18]
N physician-years	54,079		36,504	
N physicians	5,169		2,975	

*** p<0.01, ** p<0.05, * p<0.1

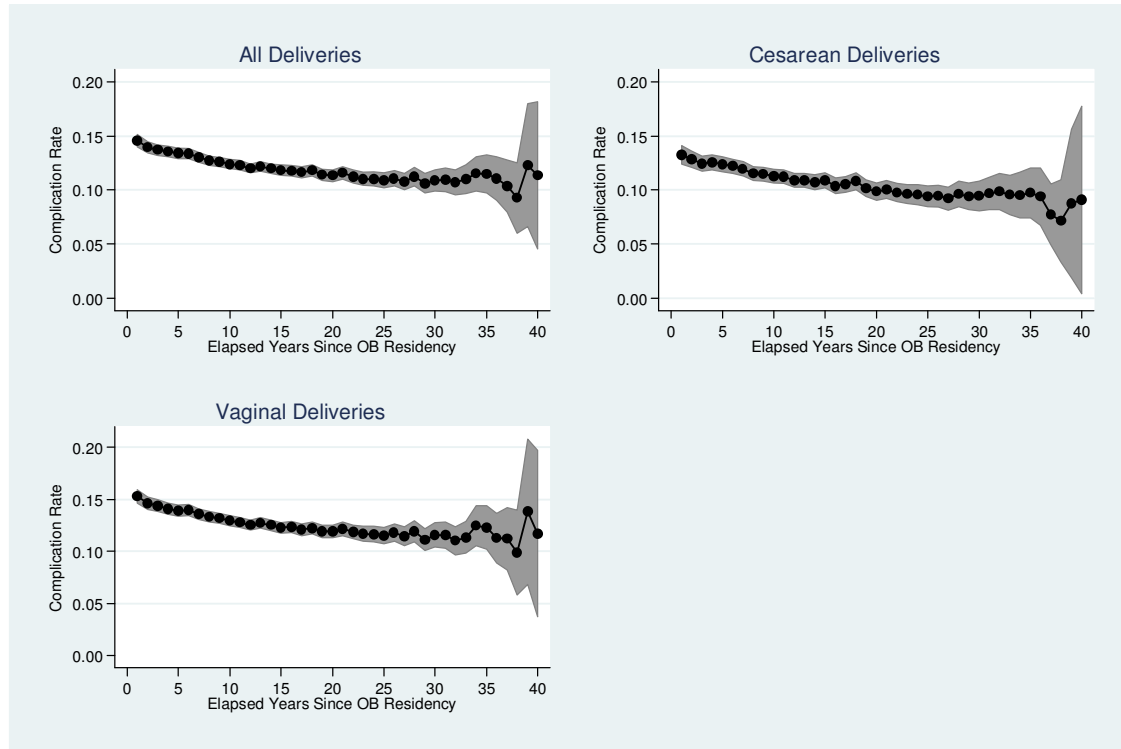
Regression coefficients are expressed as percentage points and represent the impact on average annual complication rates of a one year increase in experience over a given range. 95% confidence intervals are shown in brackets. Unadjusted estimates were generated from negative binomial regression models. Heteroskedasticity-robust standard errors also accounted for repeated observations per physician. Adjusted estimates were generated from negative binomial regression models that controlled for state, secular trend, physicians' annual cesarean delivery rate and total number of deliveries, patient comorbidities, demographics, weekend admission, and a physician-level random effect. "Stayer physicians" are those who performed deliveries in academic year 2009.

Appendix Figure A. Unadjusted annual maternal complication rates by physician years of experience for stayer physicians



“Stayer physicians” are those who performed deliveries in academic year 2009. Unadjusted rates shown with black lines, data points with black circles, and 95% upper and lower confidence areas with grey shading. Estimates were generated from negative binomial regression. Heteroskedasticity-robust standard errors also accounted for repeated observations per physician. Confidence areas were further adjusted for multiple comparisons using Sidak’s method.

Appendix Figure B. Adjusted annual maternal complication rates by physician years of experience for stayer physicians



“Stayer physicians” are those who performed deliveries in academic year 2009. Adjusted rates shown with black lines, data points with black circles, and 95% upper and lower confidence areas with grey shading. Estimates were generated from negative binomial regression models that controlled for state, secular trend, physicians’ annual cesarean delivery rate and total number of deliveries, patient comorbidities, demographics, weekend admission, and a physician-level random effect. Confidence areas were further adjusted for multiple comparisons using Sidak’s method.